DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007970
Date Inspected: 28-Jul-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-2: 7/28/09
a111-2 Forging to a110-2 Base Plate
QA Inspector witnessed welder #H49, Mr. Rick Hinkle, performing FCAW “inter tacking” of various stiffeners on the PJP and fillet weld stiffeners to the a111-2 forging and a107/b106 stiffeners, in the vertical position. QA Inspector noticed QC Inspector Jose Salazar was present to monitor pre-heat temperatures and had recorded in-process welding parameters of 235 amps and 25.2 volts. QA Inspector randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit and noted that Mr. Hinkle appeared to be in compliance with the applicable welding procedure specification (WPS 3050).

Hinge-K Pipe Beam Assembly 102A-4: 7/28/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed that OIW production personell were resuming grinding and weld clean-up, on the PJP and fillet welds stiffeners to a111-2 forging and a107/b106 stiffeners. QA Inspector spoke with lead QC Inspector

Mike Gregson and Mr. Gregson explained that OIW production personell were blending the weld start/stops, removing weld spatter and repairing undersize welds in specific areas, which were previously marked by QC Inspector Jose Salazar. Mr. Gregson also explained that the completed fillet and PJP welds on the radial stiffeners, which were found to be visually acceptable per AWS D1.5 and contract requirements, were in process of 100% magnetic particle inspection by QC Inspector Jose Salazar. QA Inspector noted that the in-process visual and magnetic particle testing by OIW QC Inspectors appeared to be in compliance with AWS D1.5 and contract requirements.

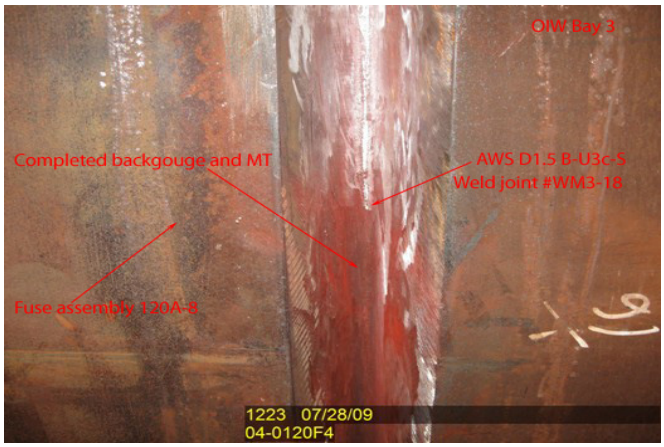
Hinge-K Pipe Beam Fuse Assembly 120A-8: 7/28/09
a124-8 Half Fuse to a124-16 Half Fuse
QA Inspector noted that the interior portion of the submerged arc welding on the CJP AWS D1.5, a124-8 half fuse to a124-16 half fuse, designated as weld joint #WM3-18, had been previously completed. QA Inspector noted that the exterior backgouging was complete and 100% visual and magnetic particle testing had been performed by QC Inspector Jose Salazar and no rejectable indications were found. QA Inspector noted that the exterior portion of the submerged arc welding on this CJP weld splice was pending, on this date. QA Inspector spoke with lead QC Inspector Mike Gregson and Mr. Gregson explained that once OIW resumes the submerged arc welding on this CJP weld splice, OIW QC Inspector Jose Salazar will be present to monitor pre-heat and in-process welding parameters, per approved OIW welding procedure specification (WPS 4020). Mr. Gregson also explained that QC Inspector Rob Walters will be performing 100% ultrasonic and magnetic particle weld inspection on the complete weld splice, after the required 72 hrs. cooling time, per AWS D1.5 and contract requirements. See attached picture below.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-1: 7/28/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector noticed that the stainless steel overlay welding was in-process, on this fuse assembly 120A-1. QA Inspector witnessed welder #F17, Mr. Igor Frolov, performing electro slag welding (ESW) in the flat position, utilizing Soudokay brand Soudotape 316L stainless steel consumable strip. QA Inspector noted that the first overlay weld passes were 100% complete and the second layers were approximately 10% complete. QA Inspector noticed QC Inspector's Mike Gregson and Jose Salazar were present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that welding amps were recorded as 1150 amps/25.3 volts, with travel speed at 254 mm/minute and a pre-heat temperature of approximately 70 degrees Fahrenheit. QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 70 degrees Fahrenheit. QA Inspector noted that Mr. Igor Frolov appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003).

AG Machining
Hinge-K Pipe Beam Fuse Assembly 120A-3: 7/28/09
a124-12 Half Fuse to a124-10 Half Fuse
QA Inspector did not arrive at AG Machining on this date.
Note: QA Inspector noted that AG was in-process of continuing the "trial" machining on this fuse assembly 120A-3. After the "trial" machining is completed throughout this week, this fuse assembly 120A-3 will be transferred back to OIW and OIW QC Inspectors will perform preliminary inspections on the ESW weld passes.

OIW will then perform any necessary welding/grinding repairs on the overlay, prior to final machining by AG. Once accepted by OIW, this fuse assembly 120A-3 will be eventually transferred back to AG Machining and AG will machine a final outside diameter of 1920mm (+/- 1mm), per contract requirements and OIW approved drawings.

Material, Equipment and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.
The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors.
The QA Inspector noted the following personell were present at AG Machining: 1 Machinist.



Summary of Conversations:
As noted above.
Comments
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer